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PTO/SB/08A (08-00)

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	
				Filing Date	
				First Named Inventor	
				Group Art Unit	
Examiner Name		February 23, 2004		Erik J. SHAHOIAN	
Attorney Docket Number		IMMR-060/04US			
U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code <sup>2</sup> (if known)		
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	A2	6,275,213		Tremblay et al.	08/14/2001
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<sup>1</sup> Unique citation designation number.

<sup>2</sup> See attached Kinds of U.S. Patent Documents.

Examiner Signature	/Xiao Wu/	Date Considered	05/14/2006
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Sheet	2	of	5	IMMR-060/04US	

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Examiner Signature	/Xiao Wu/	Date Considered	05/14/2006
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				First Named Inventor Erik J. SHAHOIAN	
				Group Art Unit	
Examiner Name					
Sheet	3	of	5	Attorney Docket Number IMMR-060/04US	
XW	A95	4,513,235		Acklam et al.	04/23/1985
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Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T <sup>4</sup>
		Office <sup>1</sup>	Number <sup>2</sup>	Kind Code <sup>3</sup> (if known)			
	<del>B1</del>		<del>WO 88/03319</del>			<del>01/30/2000</del>	
	<del>B2</del>		<del>WO 98/33113</del>			<del>07/23/1998</del>	
	<del>B3</del>		<del>WO 97/31333</del>			<del>08/28/1997</del>	
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	<del>B5</del>		<del>0 636 634</del>	<del>A3</del>		<del>11/30/1994</del>	
	<del>B6</del>		<del>0 607 580</del>	<del>A1</del>		<del>07/27/1994</del>	
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	<del>B8</del>		<del>WO 93/00569</del>			<del>01/09/1993</del>	
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	<del>B10</del>		<del>0 365 011</del>	<del>A1</del>		<del>04/27/1988</del>	
	<del>B11</del>		<del>862 194389</del>			<del>12/10/1987</del>	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	C1	<del>Baigrie, "Electric Control Loading - A Low Cost, High Performance Alternative," Proceedings of Interservice/Industry Training Systems Conference, pp. 247-254, November 6-8, 1990</del>	
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	C3	<del>Russo, "The Design and Implementation of a Three Degrees of Freedom Force Output Joystick," MIT Libraries Archives pp. 1-121, May 1990, archived 8/14/90</del>	

<sup>1</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

<sup>2</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>3</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

<sup>4</sup> Applicant is to place a check mark here if English language Translation is attached.

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Sheet	4	of	5
		Attorney Docket Number	IMMR-060/04US

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C4	<del>Brooks et al., "Hand Controllers for Teleoperation - A State of the Art Technology Survey and Evaluation," JPL Publication 95-11, NASA CR 175890, N85 28559, pp. 1-64, 03/4/1985</del>	
C5	<del>Jones et al., "A perceptual analysis of stiffness," ISSN 0014 4810 Springer International (Springer-Verlag); Experimental Brain Research, Vol. 79, No. 1, pp. 150-156, 1990</del>	
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C10	<del>Cardwell et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1030-4729/93, pp. 955-960, 1993</del>	
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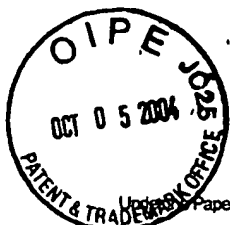
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(1 of 2)

PTO/SB/08A (10-01)

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 3

**Complete if Known**

Application Number	10/782,953
Filing Date	February 23, 2004
First Named Inventor	Erik J. Shahoian
Art Unit	2673
Examiner Name	Unassigned
Attorney Docket Number	IMMR060/04US

U.S. PATENT DOCUMENTS					
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		Number Kind Code <sup>2</sup> (if known)			
XW  ↓   <					

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
↓		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	

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Sheet **2** of **3****Complete if Known**

Application Number	10/782,953
Filing Date	February 23, 2004
First Named Inventor	Erik J. Shahoian
Art Unit	2673
Examiner Name	Unassigned
Attorney Docket Number	IMMR060/04US

**OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		<del>PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," Master of Science Thesis, MIT, Aug. 1996, archived Nov. 9, 1999.</del>
		<del>GALDER, "Design of A Force Feedback Touch Introducing Actuator For Telescopier Robot Control," Doctoral of Science Thesis, MIT, May 1982, archived June 22, 1982.</del>
		<del>WIKER, "Teletouch Display Development: Phase 1 Report," Technical Report 1299, Naval Ocean Systems Center, San Diego, July 1988.</del>
		<del>BLISS, "Optical-to-Tactile Image Conversion for the Blind," IEEE Transactions on Man-Machine Systems, Vol. MMS-11, No. 4, March 1979.</del>
		<del>JOHNSON, "Shape Memory Alloy Tactile Feedback Actuator," Armstrong Aerospace Medical Research Laboratory, AAMRL TR 99-020, August, 1999.</del>
		<del>KONTARINO et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," PRESENCE, 4(4):387-402, Harvard Univ., 1996.</del>
		<del>ALIKSTAKALNIS et al., "Silicon Mirogri: The Art and Science of Virtual Reality," ISBN 0-028161-82-7, pp. 129-180, 1992.</del>
		<del>EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," DSO Vol. 66-4, Dynamic Systems and Control Volume 4, ASME 1994.</del>
		<del>COBEL et al., "Tactile Feedback Applied to Computer Mice," International Journal of Human-Computer Interaction, Vol. 7, No. 1, pp. 1-24, 1995.</del>
		<del>PIMENTEL et al., "Virtual Reality: through the new looking glass," 2<sup>nd</sup> Edition, McGraw-Hill, ISBN 0-07-060467-X, pp. 44-393, 1994.</del>
		<del>Cyberman Technical Specification, "Logitech Cyberman GWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide," 4/5/1994.</del>
		<del>OHYOUNG et al., "The Development of A Low-Cost Force Feedback Device and Its Use in the Virtual Reality Environment," Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95, Seoul, Korea, 21-24 August 1995.</del>
		<del>KACZMAREK et al., "Tactile Displays," Virtual Environment Technologies, Chap. 9, pp. 349-419.</del>
		<del>LAKE, "Cyberman from Logitech," at <a href="http://www.ibiblio.org/Comorb/teeficue21/grevious/cyberman.html">http://www.ibiblio.org/Comorb/teeficue21/grevious/cyberman.html</a>, 1994.</del>
		<del>"Component Maintenance Manual With Illustrated Parts List, Geomil Control Shaker Part No. C-25502," Safc Flight Instrument Corporation, Revised 28 January 2002 (3 pages).</del>

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		<del>"Technical Manual Overhaul Instructions With Parts Breakdowns, Coaxial Control Shaker Part No. C-25502,"</del> Safe Flight Instrument Corporation, Revised 15 July 1980 (25 pages).	
		<del>SCANNELL, "Taking a Joystick Ride," Computer Graphics, Boston Edition, Vol. 9, No. 44, November 1994.</del>	
		<del>YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems, Raleigh, NC, July 7-10, 1992.</del>	
		<del>NOEL, "Man-Machine Telesis," C/D Journal, July/August 1972 Issue.</del>	
		<del>ROSENBERG, "Virtual Futures: Perceptual Overlays Enhance Operator Performance in Telepresence Tasks," Ph.D. Dissertation, Stanford University, June 1994.</del>	

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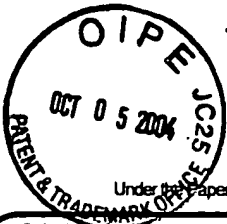
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Sheet 1 of 5

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		Number Kind Code <sup>2</sup> (if known)			
XW		3,875,488	04-1975	Crocker et al.	
		4,436,188	03-1984	Jones	
		4,477,043	10-1984	Repperger	
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Attorney Docket Number	IMMR060/04US

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		Number Kind Code <sup>2</sup> (if known)			
XW		5,381,080	01-1995	Schnell et al.	
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Sheet 3

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		6,088,017	07-2000	Tremblay et al.	

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XW		EP	0085518	A1			
		EP	875819				
		WO	95/32459				
		WO	97/21160				
		WO	00/21071				

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Sheet 4

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		<del>Adachi et al., "Sensory Evaluation of Virtual Haptic Push Buttons," Technical Research Center, Suzuki Motor Corp., 1994.</del>
		<del>Adachi et al., Sensory Evaluation of Virtual Haptic Push Buttons, 1994, Suzuki Motor Corp., pp. 1-7.</del>
		<del>Akamatsu et al., Multimodal Mouse: A Mouse-Type Device with Tactile and Force Display, 1994, Presence vol. 3, pp. 73-80.</del>
		<del>Atkinson et al., "Computing with Feeling," Comput. &amp; Graphics, vol. 2, 1977, pp. 97-102.</del>
		<del>Better et al., "GROPE 1: A computer Display to the sense of Feel," Proc. IFIP Congress, 1971, pp. 759-763.</del>
		<del>Brooks, Jr. et al., "Project GROPE, Haptic Displays for Scientific Visualization," Computer Graphics, vol. 24, #4, 1990, pp. 177-184.</del>
		<del>Buttolo et al., "Pen-Based Force Display for Precision Manipulation in Virtual Environments," 0-8186-7084 IEEE Mar. 1995, pp. 217-224.</del>
		<del>Colgate et al., "Implementation of Stiff Virtual Walls in Force-Reflecting Interfaces," Northwestern University, IL, 1993, pp. 1-8.</del>
		<del>Gotow et al., "Perception of Mechanical Properties at the Man-Machine Interface," IEEE CH2503-1, 1987, pp. 688-690.</del>
		<del>Hamford et al., "Performance Evaluation of a 6-Axis Generalized Force-Reflecting Teleoperator," IEEE Transactions on Systems, Man, and Cybernetics, vol. 21, No. 3, 1991, pp. 621-623, 631-633.</del>
		<del>Hirota et al., "Development of Surface Display," IEEE 0-7803-1363-1, 1993, pp. 256-262.</del>
		<del>Howe et al., "Task Performance w/ a dextrous Teleoperated Hand System," Proc. of SPIE, vol. 1833, 1992, pp. 1-9.</del>
		<del>Kelley et al., "On the Development of a Force-Feedback Mouse and Its Integration into a Graphical User Interface," Symp. on Haptic Interfaces for Virtual Envir. and Teleoperator Systems, 1994 Int'l Mech. Eng. Congress and Exhibition, Nov. 1994.</del>
		<del>Kilpatrick et al., "The Use of Kinesthetic Supplement in an Interactive Graphics System," University of North Carolina, 1976, pp. 1-192.</del>

Examiner Signature	/Xiao Wu/	Date Considered	05/14/2006
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		<del>Millman et al., "Design of a 4 Degree of Freedom Force Reflecting Manipulandum with a Specified Force/Torque Workspace," IEEE CH2969-4, 1991, pp. 1488-1492.</del>
		<del>Munch et al., "Intelligent Control for Haptic Displays," Eurographics '96, vol. 15, No. 3, 1996, pp. 217-226.</del>
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